December 22, 2004

Mr. A. Christopher Bakken, III
President & Chief Nuclear Officer
PSEG Nuclear LLC-X15
Post Office Box 236
Hancocks Bridge, NJ 08038

SUBJECT: HOPE CREEK GENERATING STATION - ISSUANCE OF AMENDMENT RE: ADDITION OF OSCILLATION POWER RANGE MONITOR TRIP FUNCTION (TAC NO. MC2533)

Dear Mr. Bakken:

The Commission has issued the enclosed Amendment No. 159 to Facility Operating License No. NPF-57 for the Hope Creek Generating Station. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated March 31, 2004, as supplemented by letters dated August 9, 2004, and October 20, 2004.

The amendment creates a TS containing operability requirements for the Oscillation Power Range Monitor (OPRM) channels, the required actions when they become inoperable, and associated surveillance requirements. This amendment removes manual thermal hydraulic stability monitoring requirements that will now be performed by the OPRM system.

A copy of our safety evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Daniel Collins, Senior Project Manager, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-354

Enclosures: 1. Amendment No. 159 to License No. NPF-57
2. Safety Evaluation

cc w/encls: See next page

Hope Creek Generating Station

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DISTRIBUTION

PUBLIC	OGC	GMatakas, RGN-I	DLPM DPR
PDI-2 Reading	DCollins	ACRS	CRaynor
GHill (2)	THuang	FAkstulewicz	GMiller
TBoyce	HGarg	DRoberts	

ADAMS ACCESSION NUMBER: ML043010103

OFFICE	PDI-2/PE	PDI-2/PM	PDI-2/LA	EEIB-A/SC	SRXB-A/SC
NAME	GMiller	DCollins	SLittle for CRaynor	EMarinos	FAkstulewicz
DATE	11/10/04	12/20/04	11/10/04	11/15/04	11/17/04

OFFICE	IROB-A/SC	OGC	PDI-2/SC
NAME	TBoyce	HMcGurren	DRoberts
DATE	11/23/04	12/03/04	12/21/04

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PSEG NUCLEAR LLC

DOCKET NO. 50-354

HOPE CREEK GENERATING STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 159
License No. NPF-57

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment filed by PSEG Nuclear LLC dated March 31, 2004, as supplemented by letters dated August 9, 2004, and October 20, 2004, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-57 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 159, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into the license. PSEG Nuclear LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/***RA***/

Darrell J. Roberts, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: December 22, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 159

FACILITY OPERATING LICENSE NO. NPF-57

DOCKET NO. 50-354

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
x	x
xviii	xviii
--	3/4 3-110
3/4 4-1	3/4 4-1
3/4 4-2	3/4 4-2
3/4 4-2a	3/4 4-2a
3/4 4-3	3/4 4-3
6-20	6-20
6-21	6-21
6-22	6-22
6-23	6-23
--	B 3/4 3-13
--	B 3/4 3-14
--	B 3/4 3-15
--	B 3/4 3-16
--	B 3/4 3-17
--	B 3/4 3-18
B 3/4 4-1	B 3/4 4-1
B 3/4 4-2	B 3/4 4-2
B 3/4 4-3	B 3/4 4-3

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 159 TO FACILITY OPERATING LICENSE NO. NPF-57

PSEG NUCLEAR LLC

HOPE CREEK GENERATING STATION

DOCKET NO. 50-354

1.0 INTRODUCTION

By letter dated March 31, 2004, as supplemented by letters dated August 9, 2004, and October 20, 2004, PSEG Nuclear, LLC (PSEG, or the licensee) requested Nuclear Regulatory Commission (NRC or the Commission) approval of changes to the Hope Creek Generating Station (HCGS) Technical Specifications (TSs). The supplements dated August 9, 2004, and October 20, 2004, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards determination as published in the *Federal Register* on August 3, 2004 (69 FR 46588).

The requested changes would create TS 3.3.11 to provide requirements for the Oscillation Power Range Monitor (OPRM) instrumentation; remove manual guidance for the control of thermal hydraulic instability; and revise TS 6.9.1.9, Core Operating Limits Report (COLR), to reflect the analytical methods used to determine the OPRM operating limits.

1.1 Background

On March 19, 1988, large power oscillations were experienced at the LaSalle Unit 2 reactor following the automatic tripping of both recirculation pumps in response to a false signal of anticipated transient without scram (ATWS). In response to safety concerns raised by the LaSalle instability event, the NRC initiated a reexamination of the characteristics and consequences of boiling-water reactor (BWR) instability. It was found that, under certain conditions, BWR cores may exhibit Thermal Hydraulic (T-H) instabilities, characterized by periodic power and flow oscillations. If the the oscillations become large enough, the fuel cladding integrity minimum critical power ratio (MCPR) safety limit and potentially other safety limits may be challenged. Based on this possibility, the HCGS is currently operating with interim compensatory actions (ICAs) as described in PSEG's response to NRC Generic Letter 94-02. The ICAs include restrictions on plant operation and procedural requirements for operator action in response to instability events.

The requirements of the ICAs and existing TSs limit the probability of an instability event by restricting the duration of any entry into the regions of the power verses flow (power/flow) map

most susceptible to instability under anticipated entry conditions. Actions are also required by the ICAs when conditions consistent with the onset of T-H instability oscillations are observed. These actions result in the suppression of conditions required for an instability event and thereby minimize any potential challenges to safety limits.

Implementation of the proposed TSs would allow the Reactor Protection System (RPS) trip function of the OPRM system to be enabled consistent with the Asea Brown Boveri Combustion Engineering (ABB-CE) Option III long-term solution for T-H instability. The OPRM RPS trip function would replace the ICAs and T-H instability related parts of TS 3/4.4.1, providing automatic detection and suppression of conditions which might result in a T-H instability event. This would also reduce the burden on the control room operators.

The OPRM, which was installed at HCGS during the seventh refueling outage, is currently being operated in the "indicate only" mode to evaluate the system's performance. The ICAs currently in place provide an acceptable method of ensuring adequate margin to the MCPR safety limit until the OPRM RPS trip function is enabled.

2.0 REGULATORY EVALUATION

Section 50.36 of Title 10 of the *Code of Federal Regulations* (10 CFR) sets forth the regulatory requirements for the content of the TSs. This regulation requires, among other categories, that the TSs contain limiting conditions for operation (LCOs). Section 50.36(c)(2)(ii) of 10 CFR gives four criteria to be used in determining whether an LCO is required to be included in the TSs for a particular item. The four criteria are as follows:

1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

General Design Criterion (GDC) 10 of Appendix A to 10 CFR Part 50 requires the reactor core and associated coolant, control, and protection systems to be designed with appropriate margin to assure acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences.

GDC 12 requires the reactor core and associated coolant, control, and protection systems to be designed to assure that power oscillation which can result in conditions exceeding acceptable fuel design limits are either not possible or can be reliably and readily detected and suppressed.

GDC 13 requires that instrumentation be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Additionally, appropriate controls shall be provided to maintain these variables within prescribed operating ranges.

3.0 TECHNICAL EVALUATION

3.1 Description of Proposed Changes

In its submittal, PSEG proposed to create TS 3/4.3.11 to include in the HCGS TSs. This specification would provide the LCOs, surveillance requirements (SRs), and appropriate actions based on operability of the OPRM system.

The submittal also proposed to modify TS 3/4.4.1.1 as follows:

3.4.1.1, page 3/4 4-1:	Remove the word "with" from the first sentence of the LCO and remove Subsections 3.4.1.1.a and 3.4.1.1.b entirely.
3.4.1.1, page 3/4 4-2:	
Action b:	Remove the statement, "immediately initiate action to reduce THERMAL POWER to less than or equal to the limit specified in Figure 3.4.1.1-1 within 2 hours and."
Action c:	Remove the entire statement.
Action d:	Remove the entire statement.
4.4.1.1.1.c:	Remove the word "and."
4.4.1.1.1.d:	Remove the entire SR.
4.4.1.1.4:	Remove the entire SR.
Figure 3.4.1.1.1:	Remove Figure 3.4.1.1.1.

Additionally, PSEG has proposed to revise the associated TS bases to reflect the aforementioned changes.

3.2 Evaluation of Proposed Changes

3.2.1 Creation of TS 3/4.3.1.11 OPRM and TS 6.9.1.9 COLR

The following provides a synopsis of the licensee's justification for the proposed addition of the OPRM trip function to the TSs.

The function of the OPRM is to detect core power oscillations and initiate a scram of the reactor if the magnitude of the oscillations exceeds the setpoint. The OPRM system consists of four OPRM channels and each OPRM channel consists of two OPRM modules that provide inputs to the associated RPS channel. Each OPRM channel contains more than 30 cells, with each cell being a combination of four Local Power Range Monitors (LPRMs) in adjacent areas of the core. The purpose of this arrangement is that cells using a smaller group of LPRMs to monitor instantaneous flux provide better resolution for detecting local oscillations than the Average Power Range Monitors (APRMs) alone. The LPRM signals are grouped together so that the resulting OPRM response provides adequate coverage of anticipated oscillation modes. On detecting conditions consistent with the possibility that local oscillations in core power will lead to a T-H instability, the OPRM initiates a reactor scram through the existing RPS trip logic. This capability of the OPRM provides adequate assurance that the MCPR safety limit will not be violated during all anticipated core-wide and regional T-H instability events.

The OPRM system logic configuration conforms to the existing 1-out-of-2-taken-twice logic configuration of the RPS. Each module executes the algorithms on the LPRM signals and based on the cell configurations for that channel, generates alarms and trips. The assigned locations of modules are consistent with the RPS and neutron monitoring system separation requirements. The system design accounts for isolator accuracy, instrument and system response times, and system performance requirements. Additionally, the licensee stated that the system design addresses redundancy, diversity, separation, and electrical isolation requirements.

The OPRM trip function is enabled when APRM power is greater that or equal to 30% of rated thermal power (RTP) and the recirculation drive flow is less than or equal to the value corresponding to approximately 60% of rated core flow. The OPRM provides annunciation to alert the operator when the system is enabled and also provides a pre-trip alarm upon detection of imminent onset of local core power oscillations. The purpose of this alarm is to alert the plant operator to the plant condition in time for compensatory/corrective actions to be taken to redress those conditions for which instability may be anticipated. Each OPRM module uses three separate algorithms to detect and mitigate core power oscillations. The three algorithms used are the period-based algorithm (PBA), the amplitude-based algorithm (ABA), and the growth-rate algorithm (GRA). The PBA actuates the RPS trip on detecting oscillations of a certain period and amplitude and is the only algorithm that is credited in the analysis of the capability of the OPRM system to protect the MCPR limit. The remaining two algorithms provide defense-in-depth and additional protection for T-H instability events.

In its submittal, PSEG stated that the implementation of the proposed changes will reduce the reliance on operator actions because the OPRM system automatically protects the MCPR safety limit during conditions that could lead to T-H instability, and it will not cause any degradation of the existing APRM, LPRM, and RPS systems or adversely impact the design basis and operation of any interfacing equipment. Previously, the NRC staff has reviewed the

design and effectiveness of the OPRM system and has approved the system for meeting the regulatory requirements to detect and suppress conditions that could lead to T-H instability. The staff's approval of the OPRM system is documented in safety evaluations (SEs) on the following topical reports: (1) NEDO-32645-A, "BWROG Reactor Core Stability Detect and Suppress Solutions Licensing Basis Methodology and Reload Applications," August 1996; (2) NEDO-31960-A, "BWROG Long-Term Stability Solutions Licensing Methodology," November 1995; (3) NEDO-31960-A, Supplement 1, "BWROG Long Term Stability Solutions Licensing Methodology," November 1995; and (4) CENPD-400-P-A, Revision 1, "Generic Topical Report for the ABB Option III Oscillation Power Range Monitor (OPRM)," May 1995.

The NRC staff's SE approving CENPD-400-P-A requires licensees to address six issues in their plant-specific submittals for implementing the ABB-CE Option III OPRM systems as a permanent long-term solution for the T-H issue, and to identify and justify any deviations from CENPD-400-P-A and the associated SE. The NRC staff's SE approving this report is available in the Agencywide Documents Access and Management System Legacy Library or at the NRC public document room under accession number ML9508030286. The following is a discussion of how the six issues were addressed:

> Confirm the applicability of CENPD-400-P, including clarifications and reconciled differences between the specific plant design and the topical report design descriptions.

In its submittal, the licensee stated that the HCGS installation and implementation of the OPRM is consistent with CENPD-400-P and the associated SE and there are no deviations. The NRC staff finds that the response adequately addressed this issue.

> Confirm the applicability of the BWROG topical reports that address the OPRM and associated instability function, setpoints, and margins.

The Boiling Water Reactor Owners Group (BWROG) topical reports which address the OPRM and associated instability functions, setpoints, and margins are NEDO-31960 and its supplement NEDO-32465. In its submittal, the licensee included the following statements to confirm the applicability of the topical report and its supplement. For implementation of the Option III OPRM system at HCGS:

a. All three algorithms described in NEDO-31960 and its supplement are used.

b. The validity of the selected scram setpoints has been confirmed using the initial application and reload review methodology described in NEDO-32465.

c. The selected bypass region outside of which the detect and suppress function of the OPRM is deactivated is defined in the proposed Technical Specifications.

d. The automatic protective function of the OPRM trip will be a full reactor scram.

e. The LRPM grouping assignments will conform to those shown in Appendix D of NEDO-32465 and are consistent with the NRC position.

For the proposed TS changes, the period based algorithm of the OPRM system actuates the RPS trip on detecting oscillations of a certain period and amplitudes, and is the only algorithm that is credited in the analysis of capability of the OPRM system to protect the MCPR limit. NEDO-32465 describes the confirmation setpoints of the period-based algorithm and establishes a specific range of values for the period tolerance to allow the OPRM system to be tuned for plant-specific LPRM noise characteristics. In its submittal, the licensee stated that based on the review of available plant data, and taking into account recent safety communications from GE Nuclear Energy, a tolerance of 100 milliseconds will be used for the OPRM at HCGS. The proposed setpoint for period tolerance is within the range established by NEDO-32465 and therefore, acceptable to the staff. The NRC staff finds that the response adequately addressed this issue.

> Provide a plant-specific TS for the OPRM functions consistent with CENPD-400-P, Appendix A.

In its submittal, PSEG stated that the proposed TSs are consistent with CENPD-400-P, Appendix A. The proposed TS 3/4.3.11 "Oscillation Power Range Monitor," requires four OPRM channels to be operable when thermal power is greater than or equal to 25% of rated thermal power. When this LCO is not met, the first action is to initiate an alternate method to detect and suppress T-H instability oscillations within 12 hours and secondly restore the system to operable status within 120 days. If this action is not met, the TS requires reduction of thermal power to less than 25% of rated thermal power. With one or more required channels inoperable, the TS requires that within 30 days: 1) the channel be placed in trip status, 2) its associated RPS trip system be placed in trip, or 3) the licensee initiate an alternate method to detect and suppress T-H instability. This is consistent with the model provided in CENPD-400-P, Appendix A.

Additionally, the NRC staff compared the proposed SRs with those in Appendix A of CENPD-400-P. With the following exception, the proposed SRs were consistent with those in the model. The model lists a frequency of 24 months for SRs 3.3.1.11.3, 3.3.1.11.4, 3.3.1.11.5, and 3.3.1.11.6 whereas the proposed TS list a frequency of 18 months. This difference reflects the 18-month operating cycles for Hope Creek. Also, performance of the SRs more frequently than the model is conservative. The NRC staff, therefore, finds that the proposed SRs are consistent with those in Appendix A of CENPD-400-P.

The period-based algorithm amplitude trip setpoint and confirmation counts will be documented in the COLR. Reload analysis will confirm with high confidence that the OPRM setpoint and initial MCPR value will provide adequate protection of the MCPR safety limit for anticipated stability-related oscillations. This is reflected in the proposed change to TS 6.9.1.9, "Core Operating Limits Report," by adding a reference to NEDO-32465-A, "Reactor Stability Detect and Suppress Solutions Licensing Basis Methodology for Reload Applications, August 1996." As discussed before, the use of NRC-approved Topical Report NEDO-32465-A provides an acceptable means of setpoint calculation for the OPRM system. The NRC staff finds that the proposed TSs are consistent with those provided in CENPD-400-P and therefore, adequately address the third plant-specific issue.

> Confirm that the plant-specific environmental (temperature, humidity, radiation, electromagnetic, and seismic) conditions are enveloped by the OPRM equipment environmental qualification values.

In its submittal, PSEG states that installation of the OPRM at the HCGS is consistent with the equipment qualification requirements described in the NRC staff's SE. At HCGS, the OPRM equipment is installed in the main control room and is qualified to perform its intended design functions continuously in the control room environment. The licensee stated that the OPRM system was originally environmentally qualified to operate in a relative humidity of 30% to 95%, however under normal conditions, the relative humidity of its environment is assumed to be no lower than 20%. In its October 20, 2004, submittal, PSEG referenced letter TIC 97-632, dated September 16, 1997, sent by the OPRM vendor (ABB-CE) describing the evaluation of the OPRM system at humidity levels as low as 10%. This letter stated that the primary, low humidity related, concern for electrical equipment is electrostatic discharge (ESD). In this letter, the vendor stated that the OPRM system was satisfactorily tested for resistance to ESD. Additionally, the circuit boards for the OPRM system will be coated with CONAP (an acrylic urethane) which serves to protect against environmental factors including ESD. The NRC staff finds that the subsequent ESD testing and the protective coating provide adequate resolution of this discrepancy.

The OPRM system and its installation as described in the submittal, provides a high degree of immunity from electromagnetic interference/radio frequency interference (EMI/RFI) and minimizes generated EMI/RFI that may interfere with the devices connected to the system, devices that share a common power source, and devices located in the same enclosure. The licensee further stated that the equipment for the proposed OPRM system has been qualified for EMI/RFI susceptibility based on the generic levels specific in Appendix B to Electric Power Research Institute Topical Report TR-102323, Revision 1, with the exception that the radiated susceptibility test was conducted over the range of 14kHz to 1GHz instead of 10kHz to 1GHz. The licensee further stated that sources which could generate strong magnetic fields in a frequency range of 10kHz to 14kHz are absent from the installed area of the OPRM equipment. Since the sources of magnetic fields for frequencies lower than 14kHz are not present at the installed location of the OPRM equipment, the EMI/RFI environmental qualification is found to be acceptable.

Additionally, PSEG stated that the OPRM equipment is seismically qualified to withstand the HCGS design-basis earthquake. Given the above considerations, the NRC staff finds the environmental qualification issue has been addressed.

> Confirm that the administrative controls are provided for manually bypassing OPRM channels or protective functions and for controlling access to the OPRM functions.

In its submittal, PSEG stated that HCGS procedures provide administrative control for placing individual OPRM modules in manual bypass. When not in manual bypass, the OPRM protective function is automatically bypassed or activated according to region of the reactor power/flow map currently occupied. Also, the main control room overhead annunciator is activated if the OPRM has been manually bypassed or deliberately rendered inoperative. The NRC staff finds that this response adequately addresses this issue.

> Confirm that any changes to the plant operator's main control room panel have received human factor reviews per plant-specific procedures.

In its submittal, PSEG stated that for OPRM implementation, human factor engineering principles consistent with the HCGS annunciator study have been applied in selecting annunciator locations and groupings. The OPRM has an operator interface with the CRIDS computer, control room annunciators, and the OPRM front panel LEDs. In addition, OPRM modules are provided with local LED indications for the ALARM, TROUBLE, INOP, TRIP, TRIP ENABLED, and READY modes of the OPRM system. LED indications for ALARM, TRIP, and TROUBLE are latched until reset locally. Procedural requirements control placing an OPRM module in bypass and verifying restoration. Key lock access is necessary to manually bypass an OPRM module and changes to OPRM software require both keylock access and a password. The NRC staff, therefore, finds that the licensee has adequately addressed this issue.

The licensee's above responses, with the exception of environmental qualification with respect to relative humidity, adequately address the six issues of the NRC staff's SE. The NRC staff further finds that the satisfactory qualification of the OPRM system with respect to ESD and the applied protective coating adequately addresses the discrepancy in environmental qualification between 20% and 30% relative humidity. On this basis, the NRC staff finds that the installation of the OPRM system and adoption of corresponding TSs at HCGS will continue to meet the requirements of GDC 10, 12, and 13, and is, therefore, acceptable.

3.2.2 TS 3/4.4.1 Recirculation System

PSEG proposed to remove requirements restricting operation consistent with the application of the OPRM Option III as the long-term solution to the T-H instability issue. Figure 3.4.1.1-1, "Thermal Power Versus Core Flow," is deleted together with requirements for monitoring local neutron flux noise and limiting the duration of entry into regions of the power/flow map associated with the detection, suppression, or prevention of T-H instability.

Currently, the licensee has to perform an analysis to confirm the stability boundary defined in TS Figure 3.4.1.1-1 at several power/flow statepoints and burnups throughout the current operating cycle. The restrictions of this boundary, the ICAs, and the parts of TS 3/4.4.1 related to T-H instability were imposed to ensure adequate capability to detect and suppress conditions consistent with the onset of T-H oscillations and to limit their probability of occurrence. Detection and suppression of oscillations related to T-H instability is necessary to preclude violation of the safety limit MCPR, which is an initial condition in certain accident analysis for the HCGS. Therefore, the detection and suppression of T-H instability events is required by 10 CFR 50.36(c)(2)(ii) Criterion 2. With the installation of the OPRM system, the ICAs and T-H instability related parts of TS 3/4.4.1 are no longer required to satisfy 10 CFR 50.36(c)(2)(ii).

The licensee further stated that upon removal of Figure 3.4.1.1-1 from the TSs, a similar analysis will be performed by the licensee that will ensure the BWROG ICA regions are applicable to (or must be modified to accommodate) operation of the Hope Creek core for the specific cycle. This figure identifies regions of the power/flow map susceptible to T-H instability. This information will provide a reference in the event of the OPRM system becoming inoperable so that time spent in regions of the power/flow map susceptible to T-H instability may be limited.

Given that the OPRM system will now satisfy the requirements of 10 CFR 50.36(c)(2)(ii) as they relate to detection and suppression of T-H instability, the NRC staff finds the proposed changes to TS 3/4.4.1 to be acceptable.

3.2.3 TS Bases

The NRC staff reviewed the proposed bases changes and found that they adequately reflect the previously discussed TS revisions. Therefore, the NRC staff does not object to the proposed bases changes.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New Jersey State Official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes SRs. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (69 FR 46588). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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